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# (12) United States Patent

# Kourtis et al.

# (54) SYSTEMS, DEVICES, AND METHODS FOR ANCHORING ORTHOPAEDIC IMPLANTS TO BONE

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### (56) References Cited

## U.S. PATENT DOCUMENTS

3,053,251 A 9/1962 Black et al. 3,702,611 A 11/1972 Fishbein (Continued)

#### FOREIGN PATENT DOCUMENTS

EP 1779875 A1 5/2007 GB 2372707 A 9/2002 (Continued)

#### OTHER PUBLICATIONS

Myung et al.; U.S. Appl. No. 13/905,028 entitled "Polyurethane-grafted hydrogels," filed May 29, 2013.

(Continued)

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#### (57) ABSTRACT

Methods, devices, and systems for delivering and attaching flexible implants to a bone or joint surface. An implant container includes a first component for surrounding and enclosing an implant and a second component adapted for maintaining, supporting, and conforming the shape of the implant. The implant container designed to have at least one component attachable to the implant and to a delivery instrument or tool. The implant container component having a material allowing transmission of light through a thickness of the container and a thickness of an attached implant to cure an adhesive placed between the implant and a bone surface. Additionally, embodiments described provide delivery instruments and tools for attaching implants and implants within containers to a joint or bone surface.

#### 42 Claims, 63 Drawing Sheets

